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NPPC REPORT FINDS MANDATORY COUNTRY-OF-ORIGIN LABELING COULD HAVE SIGNIFICANT COSTS FOR U.S. PORK INDUSTRY

WASHINGTON, D.C.—February 12, 2003— An economic analysis of the mandatory country-of-origin labeling program, performed by economists for the U.S. pork industry and Iowa State University, concludes it will be very costly for the U.S. pork industry, the National Pork Producers Council (NPPC) stated today.

The analysis, which was conducted by Dermot Hayes, an economist at Iowa State University and Steve Meyer, a U.S. pork industry economist, examined the potential impacts of country-of-origin labeling on several levels of the industry. According to Hayes and Meyer, the estimated costs for pork producers of implementing a full traceback system associated with country-of-origin labeling will be $10.22 per hog or $4.00 per hundred pounds. This is equivalent to a ten percent increase in the costs of on-farm production or approximately $1.02 billion for the U.S. pork industry. In addition, assuming the ten percent increase in costs is passed on to the retail level, U.S. consumers will likely demand seven percent less pork due to higher prices, Meyer said.

"The research shows that the mandatory country-of-origin program will result in negative impacts all across the board for U.S. pork producers, with no real benefits," said NPPC Board Member and President-Elect Jon Caspers, a pork producer from Swaledale, Iowa. "Some surveys have shown that U.S. consumers prefer that meat be labeled as to its country-of-origin but there is no research evidence that U.S. consumers are willing to

pay any premium for such labeled product, let alone a premium high enough to cover the costs."

The net effect on U.S. pork exports could be equally devastating. According to Hayes and Meyer by year 2010, U.S. pork exports could be 50 percent lower than they would be without the labeling program. This is because Canada, which supplied 5.7 million hogs and pigs last year to the U.S., would be forced to process these hogs in Canada. According to Caspers, this would lead to negative impacts on U.S. pork exports. "The U.S. would no longer add the value of corn and soybeans to these Canadian hogs," he said. "Canada would add the value and export the pork. Therefore, it would turn the U.S. into a net importer of pork rather than a net exporter as we are now," he said.

An additional area of concern for pork producers is the burden of recordkeeping and audits for country-of-origin labeling. "The paperwork that is involved with the country-of-origin full traceback system, promises to be quite burdensome and will add to the already lengthy list of costly responsibilities for producers," he said.

Caspers said the study makes it very clear that country-of-origin labeling would be very detrimental to pork producers of every size and type with significant losses predicted due to reduced export demand for U.S. pork, the increased costs of implementing a full traceback system and the burden of on-farm recordkeeping. "We believe that given Hayes' and Meyers' findings, Congress must conduct Congressional hearings on this issue and reevaluate the potential impacts on the U.S. pork industry," he said.

NPPC has long opposed mandatory country-of-origin meat labeling due to additional on-farm costs placed on pork producers. NPPC believes the country-of-origin labeling program should remain voluntary.

A copy of the analysis may be found at http://www.nppc.org. For more information on country-of-origin labeling, please go to the U.S. Department of Agriculture's (USDA) website: http://www.ams.usda.gov/cool/

The National Pork Producers Council (NPPC) is one of the nation's largest livestock commodity organizations. It has producer members in 44 affiliated state associations and provides a unified voice for America's pork producers on a wide range of industry and public policy issues. NPPC's website is at http://www.nppc.org.

Impact of Mandatory Country of Origin Labeling on U.S. Pork Exports

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Impact of Mandatory Country of Origin Labeling on U.S. Pork Exports

Executive Summary

This report examines the impact on U.S. pork exports of implementing mandatory country of origin labeling (MCOOL) regulations that are due to be implemented in the U.S. on September 30, 2004.

According to the study, which incorporates cost studies based on the European Union experience, a traceback system implemented under COOL will increase U.S. farm-level pork production costs by ten percent or $10.22 per head. This is equivalent to a ten percent increase in the costs of on-farm production or approximately $1.02 billion for the U.S. pork industry. In addition, assuming the ten percent increase in costs is passed on to the retail level, U.S. consumers will likely demand seven percent less pork due to higher prices.

There is enormous uncertainty about both the implementation of mandatory COOL and the likely impact on the U.S. pork industry. What is clear, however, is that the impact of the Act upon exports will be enormous if it is implemented. This means that any projection of the likely impact will be fraught with error, but it also means that it is important to get some sense of the impact.

By year 2010, U.S. exports could be 50 percent lower than they would be without the labeling program. This is because Canada, which currently supplies vast quantities of live hogs to the U.S., would be forced to process these hogs in Canada. This would lead to negative impacts on U.S. imports, with the U.S. no longer adding the value of these Canadian hogs to produce pork. Canada would then add the value and export the pork, essentially turning the U.S. into a net importer of pork rather than a net exporter.

The traceback system would allow U.S pork producers to follow their hogs from farm to retail, and might allow them to capture benefits associated with improving and branding the product. Consumers, though, have demonstrated little willingness to pay extra for country-of-origin labeling with no research evidence available that U.S. consumers are willing to pay any premium for such labeled product, let alone a premium high enough to cover costs.

Based on the findings of the study, the National Pork Producers Council (NPPC) believes that it is clear that country-of-origin labeling would be very detrimental to pork producers of every size and type with significant losses predicted due to reduced export demand for U.S. pork and the increased costs of implementing a full traceback system. Given the findings, it is critical that Congress conduct Congressional hearings on this issue and reevaluate the potential impacts on the U.S. pork industry.

1. Introduction

The 2002 farm bill contains a set of provisions (Mandatory Country of Origin Labeling, or MCOOL) requiring that from September 30, 2004 all retail meat sold in the United States shall contain information on the country of origin of the product. The act (relevant sections of which are excerpted below) specifies that the label U.S. pork be applied only to pork from hogs that were born, raised and slaughtered in the U.S. It also indicates that pork of Canadian origin must also be born, raised and slaughtered in Canada. The act is not specific about pork from animals born or raised in Canada and slaughtered in the U.S., but the Canadian government is on record opposing the application of a Canadian label to meat that was not born raised and slaughtered in Canada.

The USDA AMS released guidelines for the voluntary portion of the act on October 8th[1], but the details about the implementation the mandatory portion of the act are not yet final.

The purpose of this report is to describe two possible mechanisms under consideration for the implementation of the mandatory portion of the act, and to evaluate how each of these alternative mechanisms would impact on U.S. pork exports. Both of these mechanisms would disrupt the opening of North American markets that has been ongoing since NAFTA went into effect.

The first section documents the relevant provisions of the act. Next we describe two mechanisms that could be used to implement the mandatory portion of the act. We refer to the first mechanism as "certification with audit" and the second as "traceback". For each of these two mechanisms we work through how it would be implemented at each level, describe the likely costs of the system, and assess the impact of the provision on the competitiveness of U.S. exports. The third section projects U.S. pork exports under the two alternative mechanisms against a baseline case that assumes the Act is not implemented. Finally we describe the possible benefits of MCOOL in the fourth section of this paper.

Provisions of the Farm Security and Rural Investment Act of 2002

Full details of the act are available at http://www.ams.usda.gov/cool/. The provisions of relevance to the U.S. pork industry are:

Subtitle D—Country of Origin Labeling

2) COVERED COMMODITY.—
(A) IN GENERAL.—The term 'covered commodity' means—
(i) muscle cuts of beef, lamb, and pork;
(ii) ground beef, ground lamb, and ground pork;

8) SECRETARY.—The term 'Secretary' means the Secretary of Agriculture, acting through the Agricultural Marketing Service.

[1] See http://www.usda.gov/news/releases/2002/10/0430.htm

NOTICE OF COUNTRY OF ORIGIN.

(1) REQUIREMENT.*—Except as provided in subsection (b), a retailer of a covered commodity shall inform consumers, at the final point of sale of the covered commodity to consumers, of the country of origin of the covered commodity.*

(2) UNITED STATES COUNTRY OF ORIGIN.—*A retailer of a covered commodity may designate the covered commodity as having a United States country of origin only if the covered commodity— in the case of lamb and pork, is exclusively from an animal that is exclusively* ***born, raised, and slaughtered*** *in the United States;*

(b) EXEMPTION FOR FOOD SERVICE ESTABLISHMENTS.*—Subsection (a) shall not apply to a covered commodity if the covered commodity is— (1) prepared or served in a food service establishment; and (2)(A) offered for sale or sold at the food service establishment in normal retail quantities; or (B) served to consumers at the food service establishment.*

(c) METHOD OF NOTIFICATION.*—*

(1) IN GENERAL.—The information required by subsection (a) may be provided to consumers by means of a label, stamp, mark, placard, or other clear and visible sign on the covered commodity or on the package, display, holding unit, or bin containing the commodity at the final point of sale to consumers.

(2) LABELED COMMODITIES.—*If the covered commodity is already individually labeled for retail sale regarding country of origin, the retailer shall not be required to provide any additional information to comply with this section.*

(d) AUDIT VERIFICATION SYSTEM.—*The Secretary may require that any person that prepares, stores, handles, or distributes a covered commodity for retail sale maintain a verifiable recordkeeping audit trail that will permit the secretary to verify compliance with this subtitle (including the regulations promulgated under section*

(e) INFORMATION.—*Any person engaged in the business of supplying a covered commodity to a retailer shall provide information to the retailer indicating the country of origin of the covered commodity.*

(f) CERTIFICATION OF ORIGIN.—

(1) MANDATORY IDENTIFICATION.—*The Secretary shall* ***not*** *use a mandatory identification system to verify the country of origin of a covered commodity.*

(2) EXISTING CERTIFICATION PROGRAMS.*—To certify the country of origin of a covered commodity, the Secretary may use as a model certification programs in existence on the date of enactment of this Act, including—*

(A) the carcass grading and certification system carried out under this Act;

ENFORCEMENT.
(a) IN GENERAL.—Except as provided in subsections (b) and (c), section 253 shall apply to a violation of this subtitle.
(b) WARNINGS.—If the Secretary determines that a retailer is in violation of section 282, the Secretary shall—
(1) notify the retailer of the determination of the Secretary;
and
(2) provide the retailer a 30-day period, beginning on the
date on which the retailer receives the notice under paragraph
(b) from the Secretary, during which the retailer may take necessary steps to comply with section 282.
FINES.—If, on completion of the 30-day period described in subsection (b)(2), the Secretary determines that the retailer has willfully violated section 282, after providing notice and an opportunity for a hearing before the Secretary with respect to the violation, the Secretary may fine the retailer in an amount of not more than ***$10,000 for each violation.***

REGULATIONS.
‘‘(a) GUIDELINES.—Not later than September 30, 2002, the Secretary shall issue guidelines for the voluntary country of origin labeling of covered commodities based on the requirements of section

(b) REGULATIONS.—Not later than September 30, 2004, the Secretary shall promulgate such regulations as are necessary to implement this subtitle.

APPLICABILITY.
This subtitle shall apply to the retail sale of a covered commodity beginning ***September 30, 2004.***

Summary provided by USDA
Title X, Miscellaneous – Country of Origin Labeling

Section 10816 – Requires mandatory country of origin labeling for beef, lamb, pork, fish, perishable agricultural commodities and peanuts after a two-year voluntary program. The Secretary is prohibited from establishing a mandatory identification system to verify the county of origin of a covered commodity but the Secretary may use, as a model, certification program in existence on the date of enactment, including the carcass grading and certification system, voluntary country of origin beef labeling system, and those systems used to carry out the market access program under the Agricultural Trade act and the National School Lunch act. Any suppliers of covered commodities must provide information to the retailer indicating the products country of origin. If a retailer willfully violated this Section, they face a fine of not more than $10,000for each offense. Guidelines for the voluntary program must be issued not later than September 30, 2002, and

regulations for the mandatory program must be promulgated not later than September 30, 2004.

Discussion of the Act

The act requires that after September 30, 2004, all retail cuts of meat including ground product shall have country of origin label. The act is clear in defining U.S. meat as that which originates in animals born raised and slaughtered in the U.S, and it clearly puts the responsibility for the accuracy of this label on the retailer.

The act, as it pertains to the Secretary of Agriculture, contains a contradiction in that it states *"The Secretary may require that any person that prepares, stores, handles, or distributes a covered commodity for retail sale maintain a verifiable recordkeeping audit trail that will permit the secretary to verify compliance with this subtitle"* while it prohibits the Secretary from using a *"mandatory identification system to verify the country of origin of a covered commodity."* NOTE, HOWEVER, THAT THIS CONTRADICTION ONLY APPLIES TO THE SECRETARY OF AGRICULTURE. There is nothing in the Act that prohibits "any person that prepares, stores, handles, or distributes a covered commodity for retail sale" from requiring an animal identification system in order to facilitate a "verifiable recordkeeping audit trail." Therefore, mandatory animal identification is not prohibited by this legislation; only the Secretary of Agriculture is prohibited from requiring animal identification.

The contradiction is important because certification, the Secretary's only real alternative to a mandatory animal identification system, is not necessarily an audit trail. To see why this is true consider a packer who buys a load of pigs of unknown and possibly mixed origin from a producer. A certification program would require that the producer simply state that all of the hogs were born and raised in the U.S. An audit trail would require some evidence such as purchase receipts, detailed records or legal documents such as an affadavit that this was the case, and would require this information for each animal in the load. It is presumed that producers' records (receipts for purchased animals, production records for farrow-finish operations) can vouch for the origin of the animals. How this proof can be attached to a particular animal or group of animals without a positive identification system is as yet unclear?

Under the threat of fines in the amount of $10,000 per occurrence, it seems highly unlikely that retailers will accept a simple certificate without any evidence that the certificate is valid.

U.S. pork producers' ability to identify the origin of each animal or batch of animals depends on the production system employed.

1. Pigs are born on the farm in **farrow-to-finish operations** and are managed in batches or groups, usually in all-in, all-out production systems. For disease prevention reasons, pigs from other sources are rarely introduced into these groups.
2. Many **finishing operations** purchase single-source pigs, thus allowing them to track the origin and identity of pigs in the same manner as farrow-to-finish operations.

3. Other **finishing operations** purchase pigs from multiple sources but keep them in segregated groups by site or building. Again, all-in all-out systems are predominantly used and the only co-mingling of pigs would be for those that grow slowly and remain below market weight when the production building needs to be emptied, cleaned and prepared for the next group of pigs.
4. There are still some **finishing operations** that purchase pigs from several sources and co-mingle them during the feeding period. The number of this type of operation is steadily declining. Modern bio-security systems (used by the vast majority of producers) preclude co-mingling of multi-source pigs. Fewer and fewer pigs are sold through feeder pig auctions where their source can be lost.

Note that, even for operations that employ modern bio-security systems, the identity and origin of an individual pig is tied only to the identity and origin of the group to which it belongs. Pork producers can maintain this batch identity in most cases. Outside certification would add substantial costs, however.

Packing plants can maintain the "batch" identity but only at significant costs for segregation. The retailer who is ultimately responsible for the label will be fined for accepting certificates without an audit trail, but the only identification system currently feasible is on a batch basis. It is not clear from the law or the regulations that batch identification will be acceptable under the law.

2. Two Mechanisms for Implementing the Act

There are two possible solutions to the contradiction described above. The first is based on a strict interpretation of the word "audit" and requires that the retailer be able to trace a piece of meat back to the original animal. It is obvious from the discussion above that USDA cannot require this but that retailers can require it of their suppliers who, in turn, can require it of their suppliers. Such a system has been implemented in parts of the EU where it is called traceback. It is technically and economically feasible in the U.S. but it could not be implemented by September 2004.

The second solution is to require that certificates be backed up by some proof that meat came only from animals born, raised and slaughtered in the U.S. This one is feasible under current marketing practices. The easiest way of meeting it would be to exclude all non-U.S. animals. Another possible solution would be strict segregation of Canadian-produced market hogs and U.S.-fed Canadian-farrowed pigs. Either course of action would cause these animals to be heavily discounted due to increased costs and would impose enormous economic strain on Canadian producers. This economic pressure would create strong incentives for Canadians to feed and slaughter their own animals and export pork, not pigs. This reorientation of the Canadian pork industry cannot be completed by 2004.

Negotiations about these two interpretations are ongoing among interested parties and the AMS. Currently the AMS is arguing that there is "no wiggle room" in the act and is therefore suggesting that traceback is required. USDA cannot, though, require the animal identification system needed to facilitate traceback. Furthermore, the packers

who have attended these meetings know this is not feasible within the timeframe and so are not making any preparations for such a system.

The Canadian pork industry is much more aware of the impact of these provisions than their counterparts in the U.S. and have begun to prepare for the separation of the two systems while vociferously opposing the act itself. Canadian farrowing units have begun to build finishing facilities or to line up local contracts for finishing. Canadian producer associations are also trying to encourage new packing facilities.

The ultimate outcome of the negotiations will probably not be known for at least a year, may involve a delay in implementation and some mixture of both systems.

Either system must be applied to at least three and possibly four types of pork products. They are:

1. Canadian pork – pork from pigs that are born, raised and slaughtered in Canada. This product will be easy to identify and to traceback to a Canadian plant.
2. U. S. pork – pork from pigs that are born, raised and slaughtered in the U.S. This pork will be harder to identify and track because much of it is the result breeding and farrowing on farms scattered throughout the country.
3. "Hybrid" pork – pork from pigs that are the product of some combination of activities across country boundaries. There are many possible labels for this pork since pigs can be born in either country, fed in either or both countries, and slaughtered in either country. Some of this product will require only segregation through the slaughtering and processing stages. Other "hybrid" product will require segregation at the production level and will thus incur more costs.

Traceback

Originally implemented in the European Union (EU) in response to the BSE or mad cow disease scare, traceback was originally introduced to guarantee the EU consumer that beef came from animals slaughtered at less than two years of age. All beef animals in the EU have an associated passport and have two ear tags that corroborate the information on the passport. This passport contains details of the birth and document each time the animal was sold. The producer cannot sell animals without this passport and the associated ear tags. When the animal is slaughtered bar codes on the passport and the ear tags are inserted into an information system that tracks the location of the carcass using an infrared device on the gambrel, or the simple location of the animal on the line. When the carcass is cut, baggage tags are inserted into the primals, and these primals can then be sold with a guarantee of full traceback to the original animal.

EU retailers or processors who buy these primals typically do not make any attempt to maintain the identity of the meat as it is broken down into retail packs. However they do impose restrictions that must be met by all of the primals they buy. For example it is typical to see labels indicating that a particular piece of meat came from a traditional British beef breed, fed on non GMO grains and raised a British farm. The consumer is given a traceback number and is given the impression that they can contact

the original farmer. Typically, this information can only be used to traceback to a small group of farmers who provided the primals that were cut in the same batch.

Some EU plants have gone further than this batch traceback and can actually trace an individual piece of meat back to the original passport. This is done using infrared chips in each of the plastic basins into which each primal is broken down. When the plastic basin reaches the end of the line the worker punches a button which generates a bar coded tag for each individual retail cut and this tag is placed manually in the pack.

- **Likely Costs of a Traceback System in the United States**

The costs provided here are based on costs associated with the implementation of the system in the EU adapted for the U.S. pork industry. The EU began this process with some key advantages. First, the use of individual animal ID's had earlier been mandated to avoid subsidy fraud. Therefore this cost was not counted as part of the system. Second, EU plants are smaller in size, and use slower line speeds and could be more easily adapted to the changes required. Third, a large portion of the EU pork industry continues to rely on the sale of half-sides, or primals, and much of the further cutting is done in family owned butcher shops or within supermarkets. This third feature is important because it allowed most retailers to meet traceback requirements using a batch cutting system. The almost universal reliance on the sale of boxed products or retail ready packs in the U.S. would force packers to adopt the more expensive individual cut traceback system.

We estimate that the use of twin ear tags and the associated recording system would cost $2.00 per animal. Packers would need to adapt slaughter floors to maintain individual animal identification to the cutting floor and this would add an estimated $0.25 cents per animal. The most expensive component of the system involves the cutting floor. Parts of a particular animal would be kept together until labeled and this would require a re-configuration of the cutting floor. In addition workers would be used to maintain the system and to physically place the labels in the packs. Costs for converting an EU plants to such a system involved a 50% increase in fixed costs per animal and a 20% increase in variable costs per animal. If we apply these to charges to typical large scale U.S. pork plant with $3.00 per head fixed costs and $23 per head variable cost, the additional cost is $1.50 per animal for the additional capital and $4.60 per animal for additional labor. Additional costs at the retail level are estimated at one tenth of a cent per pound (or $1.87 per animal) for labels, additional record keeping, audit compliance and labor. The total additional costs of the traceback system are therefore estimated at $10.22 per animal or $4.00 per hundred pounds. This is equivalent to a 10% increase in on farm production costs or about $0.08 per pound for retail meat.

- **Impact of Traceback on Canada and the United States**

Under this traceback system, all pork sold through U.S. retailers would have to be identified and traced. Since it not likely that "retail" and "foodservice" production systems will be segregated, all U.S. born, raised and slaughtered pork (since any of it may enter the retail channel), and all pork from feeder pigs or slaughter pigs imported from Canada would be subject to traceback. Canadian pork destined for Canadian consumers and for overseas markets would not be required to be traceable. So, the only

Table 1 Imports of live hogs and pork from Canada, 2002*

	Million head	*Million pounds, carcass weight***	*Thousand metric tons*
Live Hogs	5.723	1040.87	486.87
Pork		873.70	396.42
Total		1914.57	883.29

*Extrapolates annual data for 2002 from January-November data.
**Assumes death loss of 3%, average carcass weight of 187.5 lbs.

pigs that Canadians must "trace back" are those that are bound for the United States as weaned pigs, feeder pigs, and market hogs – about 5.7 million live animals in 2001. Conversely, every pig born, raised and slaughtered in the U.S. – about 92 million animals in 2001 -- would be subject to the traceback system. So, most of the costs associated with the change would be borne by the U.S. pork industry, and this would give Canadian pork producers and export-orientated packers in Canada a cost advantage in international markets. The likely impact of this cost advantage is discussed in the third section of this report.

Certification with an Audit Trail

A logical alternative to the enormous costs and expense associated with traceback would be to allow each participant in the marketing channel to certify that the product comes only from U.S. sourced animals. When audited under this system the farmer or packer would simply have to prove that all of the animals or products in a particular batch were U.S.-sourced and they would not need to maintain identity. This system would not impact the 89% of the pork consumed in the U.S. that comes from animals born and raised in the U.S. However, the 11% of the pork that originates from animals that are born, raised or slaughtered in other countries would be severely impacted. Product with ties to Canada accounts for 91% of this product – about 10% of total U.S. pork.

To see why this product is severely impacted, consider that a U.S. pork packer would have to strictly segregate animals that were *not* certified to have been born and raised in the U.S. First, these animals would need to be transported and penned separately. Second, these animals would all need to be slaughtered and processed in a batch. If the batch size was less than one day's kill, the line would need to come to a halt until all U.S. product had been cleared from the system. All carcasses not designated as being from the U.S. and would require different labels and would need to be kept separated while being chilled overnight. The de-boning and cutting of this meat would also require a separate batch size, and again the line would have to be stopped while changing from one type of product to the other.

If the batch size was for one full day's slaughter, additional pen space would be needed to collect these non-U.S animals, and additional coordination costs would be incurred to ensure that no U.S. animals were included in that batch. (One U.S. packer interviewed for this report stated that if the act were implemented in this fashion that they would refuse to slaughter any non-U.S. hogs so as to avoid the burdens associated with maintaining two separate production and distribution systems.)

Boxes and retail packs from this product would need special labels and handling and a system would be required to handle possible audits. It is not clear whether retailers would want this "hybrid" product. It seems likely that they would prefer product that bears either only a U.S. or only a Canadian label. The "hybrid" meat could be sold for further processing (where there is no country-of-origin labeling requirement) or go to export sales or be sold to hotels and restaurants (since foodservice product is exempt). THE LATTER TWO ARE THE HIGHEST VALUE MARKETS FOR U.S. PORK.

In fact, retailers would probably only sell "hybrid" product if it was discounted, and packers would be prepared to process these animals only if they could discount the purchase price enough to cover their additional costs plus the discount required by the retailer. Whether additive or compounded**,** the effect of these multiple discounts would be most severe on farms that import Canadian feeder pigs, and these farms would pass this discount plus their certification costs back to the Canadian sow farms from which the pigs originate.

The initial impact of this certification system would be to create a large price wedge between U.S. sourced product and Canadian product, and this price wedge would be most severe for five or six million feeder pigs that would otherwise have been exported to the U.S[2]. We estimate, based on discussions with packers and producers and a reading of the comments on the AMS web site referenced above, that the impact of these multiple discounts would depress feeder pig prices in Canada by $16.50 per head.

Furthermore, prices for ALL Canadian hogs will likely be depressed when several U.S. packers decline to buy Canadian market hogs because of large segregation and certification costs. Some U.S. packers may remain in the market for Canadian market hogs, but it is a virtual certainty that there will be fewer than at the present time. The absence of U.S. competition for Canadian hogs will allow Canadian packers to pay lower prices relative to U.S. market hog prices and further reduce income to Canadian pork producers.

Lower prices might drive some Canadian farrowing and feeding units out of business but many (or perhaps even most) would receive some sort of additional compensation that may keep them in business. It is almost certain that whole-farm income insurance payments would be triggered by the decline in prices and direct compensation from either the Canadian federal or provincial governments, or both, is certainly not out of the question. The hogs would begin to find alternate feeding, slaughter and market channels in Canada and their availability at lower cost would stimulate growth the Canadian packing sector. More Canadian hogs would be slaughtered in Canada and thus more pork would be produced in Canada. BUT THERE

[2] Several U.S. packers (except IBP) have recently announced that they do not plan to handle hybrid hogs if MCOOL is imposed. The most likely scenario is that the IBP plant in Storm Lake would switch over to slaughtering these animals.

WILL BE FEW, IF ANY, MORE CONSUMERS IN CANADA. The added Canadian pork output will be exported to both the U.S. and to traditional U.S. export markets.

Canada already has full access to Mexico and Japan and has already begun to capture U.S. market shares in both of these markets. In addition, Canada dominates the U.S .in South Korea, and Australia. The U.S. does not have any significant marketing advantage over Canadian product in any of these markets and would therefore begin to lose market share.

The volume of hybrid pork that would potentially be encouraged to move back into Canada is about 870,000 tons (CWE) an amount that is about 25% greater than total U.S pork exports. Consequently the impact of the certification-with-audit scenario on U.S. pork exports is potentially much greater than the traceback scenario.

3. Projected Impact on the U.S. pork industry

There is enormous uncertainty about both the implementation of mandatory COOL and the likely impact on U.S. pork industry. What is clear however is that the impact of the act upon exports will be enormous if it is implemented in either of the methods described above. This means that any projection of the likely impact will be fraught with error, but it also means that it is important to get some sense of the impact.

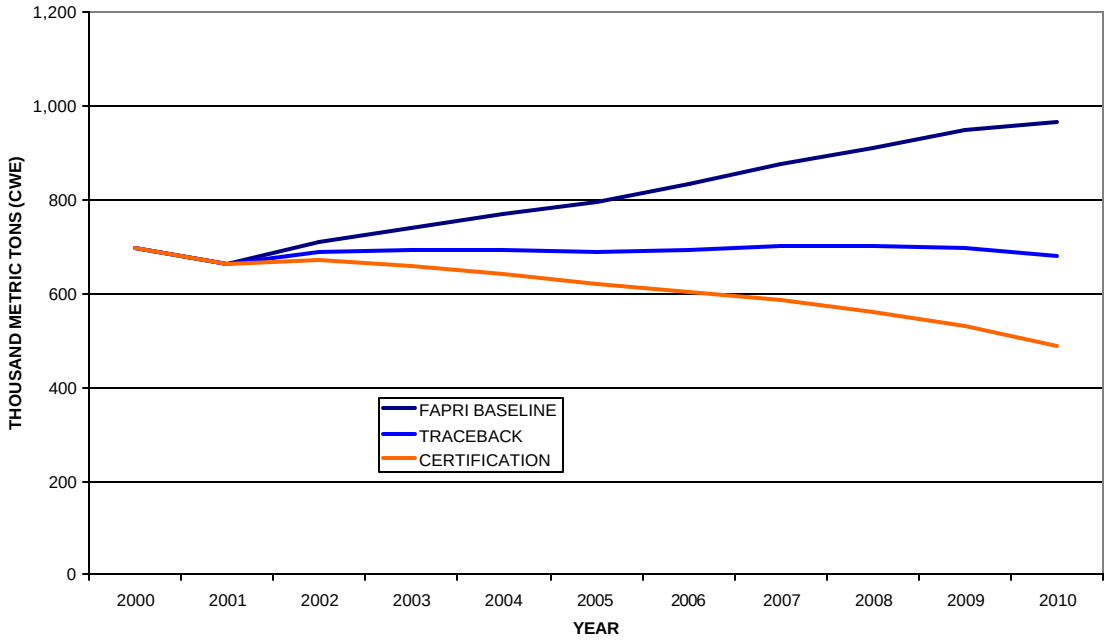
Figure 1 below shows the FAPRI baseline for U.S. exports and compares it with mandatory COOL under each of the two mechanisms described above. The first scenario (labeled "Traceback") assumes a 10% increase in U.S. pork production costs, and uses a long-term own price export elasticity of 3. This means that U.S. exports eventually decline by 30% (3 x 10%) relative to where they would have been without the added costs of the traceback system. Based upon our experience with adjustments in export markets, we assume that this impact will be spread from now until 2011.

The traceback scenario shows a stabilization of U.S exports at around current levels, with Canada taking advantage of the additional production costs in the U.S. to capture all additional export opportunities. U.S. producers will capture any growth in the domestic market – which averaged 1.1% per year from 1992 through 2001. Canadian producers will capture virtually all of the growth in international trade in pork – a rate that is forecast by FAPRI to average 4.2% per year through 2011.

There is an additional, critical impact of a traceback system. Recall that it adds 10% to U.S. costs of production. All costs must eventually be paid and so pork prices would have to eventually rise. The price elasticity of demand for pork in the United States has been estimated by a number of researchers to be approximately – 0.7. This means that a 10% increase in the price of pork will cause consumers to REDUCE their purchases by 7%. So, in addition to causing U.S. exports to remain at current levels while Canadian exports grow, the traceback system will cause a dramatic reduction in domestic U.S. pork consumption and, eventually, production.

The second scenario (labeled "Certification") shows a reduction of U.S pork exports as Canada is forced to find other marketing channels for the feeder pigs, market hogs and, possibly, pork that has heretofore sold in the U.S. Canadian production declines in this scenario as well but not by as much as do Canadian exports to the United States. Therefore, Canada has more product to ship into export markets. We assume that

PROJECTED U.S. PORK EXPORTS UNDER CERTIFICATION, TRACEBACK AND A FAPRI BASELINE.



each added unit of Canadian exports supplants a unit of U.S. exports. We again used a long term own price export elasticity of 3 and assumed that Canadian pork industry responds to a shock that is equivalent of a 16.5% price wedge at the farm level.

In both scenarios, the impact on U.S. pork exports is felt as soon as 2003 as the Canadian pork industry prepares for the deadline. The impact of certification is slower to appear because expansion of the Canadian feeding and packing industry will take several years. By 2010 U.S. pork exports are 30% below what they otherwise would have been under the traceback scenario and 50% lower under the certification scenario.

4. Possible Benefits Associated with Country of Origin Labeling

Mandatory country-of-origin labeling is not just a cost issue. There are potential benefits for both consumers and producers which must be weighed against the costs discussed above.

Some surveys have shown that U.S. consumers prefer that meat be labeled as to its country of origin but there is no research evidence that U.S. consumers are willing to pay any premium for such labeled product, let alone a premium high enough to cover the costs described above. In addition, any stated willingness to pay should be viewed with great caution since it is well known that consumers overstate the amount they are willing to pay when they merely answer a survey question rather that actually lay out cash.

Consumers in Mexico and Japan (the two largest export markets for both Canada and the United States) are already aware of the country of origin of meat they purchase at retail counters. The companies that import U.S. pork for processing in these countries have no use for a label since they will attach their own brand to the processed product.

Given that there is not enough consumer benefit from country-of-origin labeling by itself to elicit higher prices for labeled product in the U.S., let us consider other potential benefits.

Benefits associated with certification

In the certification scenario described above, the price of feeder pigs in Canada falls well below the U.S. price. This will reverse (at least temporarily) the growth in the Canadian breeding herd and allow the U.S. pork industry to capture a larger share of the U.S. domestic market. Under this scenario prices in the U.S. market are slightly higher than would otherwise have been the case, as the U.S. market adjusts to the reduced flow of live animals from Canada. U.S. exports fall and Canadian exports increase. This reduced dependence on exports will stabilize U.S. pork prices somewhat by reducing the exposure of the industry to events such as exchange rate changes and economic and sanitary disasters in foreign markets.

The scenario depicted in Figure 1 assumes that the Canadian Government will step in to mitigate the worst of the financial impact[3]. Part of this response is automatic in that MCOOL would trigger insurance indemnities from existing whole farm insurance programs. Were this government response not to occur, then there would be a dramatic reduction in the Canadian breeding herd and the loss in U.S. export markets would be lower than is described above. In a worst-case scenario for the Canadian pork industry, the financial problems caused by MCOOL would be so severe as to wipe out the proportion of production that currently ends up in the U.S. Under this scenario, there would be no reduction in U.S. exports, and the U.S. pork industry would benefit from slightly higher prices as it recaptured domestic market share lost to Canada since NAFTA was implemented.

We believe this latter, "no government help" scenario to be very, very unlikely and would put much more credence in the scenario where Canadian production falls only slightly in the short run, thus allowing Canada to capture export market share. Reduced supplies of Canadian feeder pigs and market hogs will cause prices in the U.S. to rise. Growth of the U.S. breeding herd will cause the higher price to dissipate. Given our opinion that the Canadian breeding herd will not decrease by much, more breeding animals in the U.S. will lead to a larger North American breeding herd and, eventually, larger total hog supplies in North America.

Possible Benefits Associated with Traceback

Agriculture is unique in that it is a textbook case of a perfectly competitive market. Almost all other sectors of the U.S. economy have developed some sort of branding and have some product differentiation. In a perfectly competitive industry the producer is a price taker and prices will not exceed production costs for long periods. In branded sectors new entry is limited and the brand owner has some control over price. As long as agricultural production chains rely on co-mingled products, those who buy the

[3] The Canadian Government recently announced that it is considering a policy that would allow the Canadian packing industry to dramatically increase capacity.

products will constantly demand product improvements but because of the co-mingling, the system will not pay a premium to those who do place an emphasis on quality.

The problem described above is due to the absence of a traceable system. If the pork sector can practically solve the technical problem of tracing an animal from birth through to the retail counter, then the pork chain might change.

With traceability, producers and producer groups might be able to capture the benefits associated with any improvements they make to the product. Their ability to benefit from this opportunity will be limited only by their ability to find innovative ways to improve the product in a way that the consumer finds valuable. With traceability, market pressures will prevail that reward those producers that provide higher quality and safer products and these same pressures will tend to purge those producers that compromise either the quality or the safety of the product that reaches the consumer. Of course this transition all depends on the willingness of the U.S. consumer to pay a premium for branded products. There is no guarantee that this will occur, however there is some recent evidence that suggests that this is a possibility. This evidence is discussed below.

Will the domestic and international consumer pay for a traceable product?

Recent survey evidence from both Utah State and the University of Minnesota suggests *that the consumer will not pay a premium for a country of origin label or for traceable product*. However, there is evidence that U.S and international consumers are willing to pay premiums for pork with *attributes that can only be attained with a traceable system*. The label isn't worth much, if anything, to consumers UNLESS it stands for an ATTRIBUTE that the consumer believes is valuable. Hayes, Hayenga and Thompson (Reference 1) surveyed key experts in the U.S meat chain and reported that the U.S marketplace could potentially offer a premium of 30 cents per pound at the retail level for pork that was branded, differentiated, customized and guaranteed. Of particular value in the U.S market place are food safety and product quality.

In South Korea the pork chain is now dominated by as many as thirty domestic brands and the evidence suggests that these branded products earn a premium (Reference 2). These trends will continue to be of importance because as incomes increase consumers will place less emphasis on price and more emphasis on quality, safety, and the perceived long-term impact on their health.

Denmark has recently switched to full trace-back in a plant capable of slaughtering 10,000 hogs per day (Reference 3). Germany has successfully implemented traceability in at least part of its beef chain (Reference 4) and many smaller plants in the U.K. have begun to offer full trace back to producers. The Swedish pork industry allows retail consumers to use scanner information imprinted on retail pork packages to find a picture of the pork farmer and farm site via the World Wide Web (Reference 5). The European developments are driven by EU regulations and are not driven by market forces but many producers have been quick to grab the opportunity presented by this "trace-back" system to create premium branded products (Reference 7). This international evidence suggests that the international customer may begin to expect traceability.

Note that if there are benefits from a traceable system, most of them will flow to the producer and not to the packer. However, the packing sector must incur most of the technology and logistics costs. So, there is not a sufficient incentive structure in place to

encourage a rapid adoption of traceback without either outside pressure such as MCOOL or a mutually agreed upon sharing of the benefits that arise from a traceback system.

One caveat is offered regarding this "characteristics" benefit. A mandatory traceback system will put ALL producers in the same competitive position and thus erase any advantage that an individual producer or producer group could gain by being an innovator. So, while it appears that traceback could provide information about characteristics that consumers find valuable, the industry-wide application of traceback may wash away some of these benefits at the producer level. Since it will reduce the benefit available to innovators, the innovators will be harmed (relative to the market position they might have obtained on their own) by a mandatory traceback system.

Traceability as an alternative to DNA testing

Prior to the MCOOL provisions some packers had begun to test a form of traceability based on DNA technology. With these DNA systems, packers would keep a swab of DNA for each animal that is processed and link that animal number to the producer.

In the event of a sanitary problem with a batch of meat, the packer would then test the DNA of all meat processed in a particular batch against the problem meat. In this way the packer and retailer would be able to trace the problem back to the original producer and transfer the legal consequences to the source. Note that the DNA testing would only be done in the event of a problem and would not be done on a routine basis. The benefits of branding (if any) could not be captured with this DNA system. This means that DNA testing could only work to the disadvantage of producers, and to the extent that MCOOL is viewed as an alternative to DNA testing, MCOOL might be viewed as a positive development.

5. Conclusions

This report examines the impact on U.S. pork exports of the mandatory Country of Origin Label regulations that are due to be implemented in the U.S. on September 30, 2004. The methods under which the mandatory portion of the act will be implemented have not yet been decided. Therefore, we have examined two possible methods of implementation.

The first assumes a strict interpretation of the act and essentially imposes an EU-style traceback system on the U.S. pork industry. We have used cost studies based on the EU experience to estimate the impact of this traceback system and calculated that it would be equivalent to a 10% increase in farm level production costs ($10.22 per head or approximately $1 billion for the entire U.S. pork industry). These costs would not be borne by the Canadian pork industry and this would allow Canada to build additional fattening spaces and slaughter facilities and to capture all future growth in world export markets.

The second mechanism assumes that certificates are used to document that meat is of U.S. origin, but assumes that retailers will require an audit trail as proof to go along with these certificates. Interestingly, this more liberal interpretation has a larger negative impact on exports than the stricter interpretation. This is true because the most efficient

way to provide this certification would be for those involved in the U.S. pork chain to avoid using Canadian animals or product.

Under the certification scenario, Canada would not have enough capacity to immediately begin to feed and slaughter all of the animals born in Canada, and so this product would continue to come into the U.S. market and would be sold at a discounted price. Each segment of the U.S. marketing chain that handles the hybrid product would need a discount and this discount would be compounded as it worked its way back along the system. The multiple discounts would be passed on to those who feed Canadian pigs and they would pass the discount back to the Canadian sow units.

This development would strongly encourage the development of additional fattening and slaughter capacity on Canada, and eventually would allow Canada to capture existing markets from the U.S pork industry. The current volume of U.S pork that comes from animals born, raised or slaughtered in Canada is greater than total U.S. pork exports to all sources and therefore Canada would begin to displace existing U.S. exports. Projections show that in 10 years U.S pork exports would be about 50% lower under this scenario than would otherwise have been the case.

This study has also argued that there are possible benefits associated with both a certification system and a traceback system. The certification system could be a financial disaster for the Canadian pork industry, and would provide the U.S. producer with a slightly higher price, at least in the initial 2-4 years, than would otherwise have been the case.

The traceback system would allow U.S pork producers to follow their hogs from farm to retail, and might allow them to capture benefits associated with improving and branding the product. There is no firm evidence that these benefits would accrue, but there is some recent survey evidence that suggests that it is a possibility, both on the domestic and international marketplace. However, the benefit to any one producer or group of producers will be less under a mandatory system than it would have been had that particular producer or producer group implemented a unique traceback system that effectively differentiated their product from all other products.

A final argument in favor of MCOOL is that it may head off an imminent development of a DNA system that would be used only to transfer legal liability to producers, without any of the possible benefits associated with certification or traceback.

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